

1       1. A bond pad assembly comprising:  
2              a bond pad;  
3              a trace coupled to said pad and extending away  
4 from said pad in a first direction; and  
5              a trace stub coupled to said pad and extending  
6 away from said pad in a direction other than said first  
7 direction.

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1       2. The assembly of claim 1 wherein said stub extends  
2 diametrically away from said trace.

1       3. The assembly of claim 1 wherein said bond pad is  
2 a non-solder mask defined pad.

1       4. The assembly of claim 1 wherein said stub has a  
2 thickness and width substantially equal to the thickness  
3 and width of said trace.

1       5. The assembly of claim 1 including a solder mask  
2 which defines a solder receiving area proximate to said  
3 bond pad.

1       6. The assembly of claim 5 wherein said stub extends  
2 outwardly into said solder mask.

1        7. The assembly of claim 1 including a set of three  
2        stubs each oriented 90° away from one of the other of said  
3        stubs, one of said stubs being diametrically opposed to  
4        said trace.

1        8. The assembly of claim 1 wherein said bond pad  
2        includes a tear-drop shaped portion coupling said bond pad  
3        to said trace, said stub also being tear-drop shaped.

1        9. The assembly of ~~claim~~ 1 wherein said bond pad is  
2        adapted to receive a solder ball.

1        10. A bonding system comprising:  
2              a bond pad;  
3              a trace coupled to said bond pad and extending  
4        away from said pad; and  
5              an element adapted to counteract the attractive  
6        forces applied by the trace to solder placed on the bond  
7        pad.

1        11. The system of claim 10 wherein said element  
2        includes a trace-like portion extending away from said bond  
3        pad in a direction opposite to the direction that said  
4        trace extends away from said bond pad.

1           12. The system of claim 11 wherein said trace-like  
2 element has the width and thickness of said trace.

1           13. The system of claim 10 wherein said bond pad is  
2 coupled to said trace by a tear-drop shaped portion, said  
3 element including a tear-drop shaped portion.

1           14. The system of claim 10 including a solder mask  
2 defining a solder mask opening around said bond pad, said  
3 element extending from said bond pad and through said  
4 opening.

1           15. The system of claim 10 including a solder mask  
2 and an opening defined in said solder mask surrounding said  
3 bond pad wherein said element does not extend across said  
4 solder mask opening.

1           16. The system of claim 10 wherein the attractive  
2 forces applied to said solder ball arise from the  
3 configuration of said trace, said element adapted to  
4 emulate said trace.

1           17. The system of claim 10 including a solder mask  
2 surrounding said bond pad, the attractive force on said  
3 solder being the result of the effects of the edge of said

4 solder mask, said solder mask edge being arranged to create  
5 a counteractive force on said solder.

1 18. The system of claim 17 wherein said solder mask  
2 includes a plurality of symmetrically disposed lobes.

1 19. The system of claim 10 wherein said element is  
2 configured symmetrically to said trace.

1 20. The system of claim 10 further including a device  
2 adapted to center the solder against forces which act  
3 transversely to the length of said trace.

1 21. The system of claim 20 including a stub trace  
2 which extends away from said bond pad in opposition to said  
3 trace and a pair of stub traces oriented at 90° to said  
4 trace and coupled to said bond pad.

1 22. A method of positioning solder on bond pads  
2 coupled to traces, said bond pads being surrounded by  
3 solder mask material, said method comprising:

4 depositing solder on a first bond pad having a  
5 trace extending in a first direction;

6 depositing solder on a second bond pad having a  
7 trace extending in a second direction, said first and  
8 second directions being different; and

9               causing said solder deposited on said first bond  
10      pad to move to a displaced position with respect to said  
11      first bond pad, such that said solder aligns with said  
12      solder deposited on said second bond pad.

1               23. The method of claim 22 including nesting said  
2      first bond pad with a trace coupled to said second bond  
3      pad, and nesting said second bond pad with a trace coupled  
4      to said first bond pad.

1               24. The method of claim 22 wherein causing includes  
2      wicking said solder towards a trace coupled to said first  
3      bond pad.

1               25. A method of forming solder connections in  
2      integrated circuits comprising:  
3               depositing solder on a bond pad;  
4               counteracting an attractive force supplied by a  
5      bond pad trace to the solder by providing a similar and  
6      opposite force on the solder.

1               26. The method of claim 25 wherein counteracting  
2      includes forming a trace-like portion which extends away  
3      from said bond pad in a direction opposite to the direction  
4      that the trace extends away from said bond pad.

1           27. The method of claim 26 wherein counteracting  
2 includes forming a solder mask around said bond pad and  
3 causing said trace-like element to extend outwardly from  
4 said bond pad into said solder mask.

1           28. The method of claim 25 wherein counteracting  
2 includes forming tear-drop shaped portions on two opposed  
3 sides of a bond pad.

1           29. The method of claim 25 further including  
2 providing elements which tend to cause said solder to  
3 center on said bond pad.

1           30. The method of claim 29 further including  
2 providing a set of three elements coupled to said bond pad  
3 and oriented at approximately 90° to an adjacent element.